

Amendment dated

Reply to Office Action of December 13, 2005

REMARKS

By this amendment, claim 35 has been amended. Claim 38 has been canceled. Claims 35-37 and 39-48 are pending in the application. Applicant reserves the right to pursue the original claims and other claims in this and other applications.

The drawings stand objected to, and the specification has been amended to correct a typographical error to address the concerns raised in the Office Action. No new matter has been added. Accordingly, the application is believed to be in condition for allowance.

Claims 35-36, 38, and 40 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Zhao et al. (US 6,339,248). This rejection is respectfully traversed.

Claim 35, as amended, recites a pixel comprising, *inter alia*, “a reset region of a first conductivity type ... configured to apply a reset charge to said charge collection region in response to a pulsed reset signal applied to said reset region; and a pulsed voltage source for providing said pulsed reset signal” (emphasis added). Zhao et al. does not disclose these limitations. To the contrary, Zhao et al. discloses that “the N+ region 125 is connected to a fixed voltage such as the supply voltage V_{DD}. The reset gate 121 is periodically activated by a reset signal. When the reset signal is “on,” the channel under the reset gate 121 is made conducting, and current is able to flow through the transistor so as to reset the photodiode.” Col. 5, ln. 29-34 (emphasis added). FIG. 8 of Zhao et al. also shows N+ region 123 connected to a fixed supply voltage V_{DD}. Applicant respectfully submits that there is no pulsed voltage source for providing said pulsed reset signal as recited in claim 35. Since Zhao et al. does not disclose all the limitations of claim 35, claim 35 and dependent claims 36 and 40 are not

Amendment dated

Reply to Office Action of December 13, 2005

anticipated by Zhao et al. Claim 38 has been canceled. Applicant respectfully requests that the 35 U.S.C. § 102(e) rejection of claims 35-36 and 40 be withdrawn.

Claims 37, 42-43, and 45 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Zhao et al. in view of Chen et al. (US 6,392,263). This rejection is respectfully traversed. In order to establish a *prima facie* case of obviousness “the prior art reference (or references when combined) must teach or suggest all the claim limitations.” M.P.E.P. §2142.

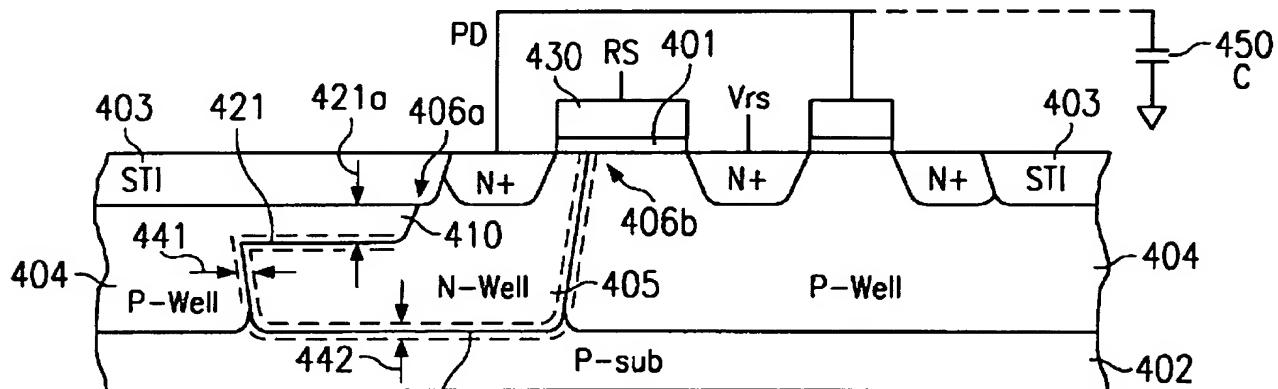
Claim 37 depends from claim 35 and is patentable at least for the reasons mentioned above.

Neither Zhao et al. nor Chen et al., even when considered in combination, teach or suggest all limitations of independent claim 42. Claim 42 recites, *inter alia*, a pixel for use in an imaging device “consisting essentially of: ... a reset region ...; a source follower transistor ...; and a capacitor in electrical communication with said reset region and said source follower transistor for storing charge collected in said charge collection region.” As noted in the Office Action, Zhao et al. does not teach or suggest all of these limitations. Chen et al. is cited as teaching a capacitor in electrical connection with the reset region 123 and the charge collection region for storing charge collected in the collection region. However, Chen et al. teaches that a “capacitor 450 may be added to the photodiode node in order to reduce the charge injection effect of the reset switch.” Col. 6, ln. 59-61 (emphasis added). In Chen et al., FIG. 4 shows a capacitor connected to a reset transistor N+ well and to a row select transistor gate. Chen et al. FIG. 4 (reproduced below). Applicant respectfully submits that there is no capacitor in electrical communication with said reset region and said source follower transistor for storing charge collected in said charge collection region as recited in claims 42. Claim 42 also recites the limiting phrase “consisting essentially of,” which

Amendment dated

Reply to Office Action of December 13, 2005

excludes references which contain other structures in the pixel. Thus, Chen et al. does not remedy the deficiency of Zhao et al.

Chen et al. FIG. 4*FIG. 4*

Since Zhao et al. and Chen et al. do not teach or suggest all of the limitations of claim 42, claim 42 and dependent claims 43 and 45 are not obvious over the cited references. Applicant respectfully requests that the 35 U.S.C. § 103(a) rejection of claims 37, 42-43, and 45 be withdrawn.

Claim 39 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Zhao et al. in view of Kochi et al. (US 6,670,990). This rejection is respectfully traversed. Claim 39 depends from claim 35 and is patentable at least for the reasons mentioned above. Applicant respectfully requests that the 35 U.S.C. § 103(a) rejection of claim 39 be withdrawn.

Claims 41 and 44 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Zhao et al. in view of Chen et al., and further in view of Dasgupta (US 6,146,939). This rejection is respectfully traversed. Claims 41 and 44 depend from claim 42 and are

Amendment dated

Reply to Office Action of December 13, 2005

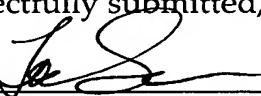
patentable at least for the reasons mentioned above. Applicant respectfully requests that the 35 U.S.C. § 103(a) rejection of claims 41 and 44 be withdrawn.

Claims 46-48 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Zhao et al. in view of Chen et al., and further in view of Wada et al. (US 6,677,676). This rejection is respectfully traversed. Claims 46-48 depend from claim 42 and are patentable at least for the reasons mentioned above. Applicant respectfully requests that the 35 U.S.C. § 103(a) rejection of claims 46-48 be withdrawn.

In view of the above amendment, Applicant believes the pending application is in condition for allowance.

Dated: March 13, 2006

Respectfully submitted,

By 
Thomas J. D'Amico

Registration No.: 28,371

Rachael Leventhal

Registration No.: 54,266

DICKSTEIN SHAPIRO MORIN &
OSHINSKY LLP

2101 L Street NW

Washington, DC 20037-1526

(202) 785-9700

Attorneys for Applicant